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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/699,822

11/04/2003

Masaru Furuta

NOG-0019

4442

23353

7590

05/13/2004

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EXAMINER

WELLS, NIKITA

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/699,822

Applicant(s)

FURUTA ET AL.

Examiner

Nikita Wells

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 050504.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 and 8-10, are rejected under 35 U.S.C. 102(b) as being anticipated by R.M. Caprioli (5,808,300).

With respect to claims 1, 2, 5, and 9, R.M. Caprioli discloses (Fig. 29; Col. 2, lines 55-64; Col. 3, lines 24-42; and Col 8, lines 45-62) a sample preparation method and apparatus for sample analysis of samples on sample plates by matrix assisted laser desorption ionization (MALDI) mass spectrometry comprising: method which applies a laser beam onto the sample placed on the sample plate (22) attached to a mass spectrometer (10) so that the sample is ionized, the sample plate (22) having one portion of areas on the sample plate (22) surface as an ionization area used for ionizing the sample through laser irradiation, and another portion on the sample plate surface being prepared as a plane area to which a membrane bearing the sample adsorbed thereon is fixed.

With respect to claims 4, 6, 8, and 10, R.M. Caprioli discloses a sample preparation method and apparatus for sample analysis of samples on sample plates by (MALDI) mass spectrometry wherein the sample on the membrane consists of peptides, proteins, lipids, saccharides, or the membrane is at least one polymer selected from the group consisting of PVDF, nylon, or cellulose (see Col. 1, lines 8-14 and lines 51-67).

With respect to claim 3, R.M. Caprioli discloses (Col. 10, lines 44-48 and 61-67) the sample preparation method, wherein in the step of fixedly holding the membrane bearing the sample adsorbed to the plane area, a medium in which the sample is developed is superposed on the membrane so that, after the sample has been transferred from the medium to the membrane by applying a voltage between the medium and membrane, the membrane is fixedly held in a state in which the membrane is electrically conducted to the sample plate.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7, 11, and 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over R.M. Caprioli (5,808,300) in view of Brown et al. (2003/0116707).

With respect to claims 11 and 12, R.M. Caprioli discloses a sample preparation method and apparatus for sample analysis of samples on sample plates by (MALDI) mass spectrometry, but fails to disclose that the ionization area, portions on which respective samples are separated from the other portions by borders having grooves each of which surrounds the corresponding sample.

However, Brown et al. disclose (Abstract; Fig. 1; 0004; and claims 1, 10, 17, and 41) a MALDI mass spectrometer sample plate having portions on which respective samples are placed which are separated from the other portions by borders having grooves.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize and substitute the MALDI sample plate of Brown et al. into the MALDI mass spectrometry apparatus of R.M. Caprioli to provide samples with borders having appropriate grooves in order to facilitate the analysis of peptides, proteins, lipids, saccharides, etc.

With respect to claim 7, Brown et al. fail to disclose that in the sample preparation method, the modifying reaction is a reaction caused by at least one enzyme selected from the group consisting of proteolytic enzyme, glycolytic enzyme, nuclease and a combination thereof. However, the treatment with enzymes is a normal way of fragmenting the proteins, wherein the resulting fragments are further subjected to high accuracy MALDI mass analysis.

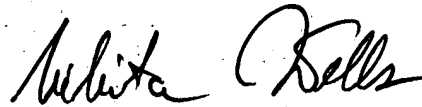
Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gusev et al. (6,140,639) disclose a system and method for on-line coupling of liquid capillary separation with MALDI mass spectroscopic analysis of peptides, proteins, lipids, saccharides, and polymers.
6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2881

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikita Wells whose telephone number is (571) 272-2484. The examiner can normally be reached on 8:30 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The central fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Nikita Wells

Primary Examiner, Art Unit 2881

May 5, 2004